

DECLARATION

**REMOVAL OF IRON COLLOID FROM
DRINKING WATER**

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by

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Abstract

This paper presents a new carbon material to remove iron colloid from drinking water. Iron colloid is a common problem in water treatment. Most ground water from Sri Lanka is contaminated by iron. It present as ferrous ion. After it reaches oxygen, it is converted to ferric ion. Because of the negative charge of iron colloid it cannot be precipitated under gravity. Common methods to remove iron colloid are coagulation process, oxidation filters and adsorption methods. The material can be prepared simply and also it is a natural thing. *Trema orientalis* is most abundant tree in Sri Lanka. Charcoal can be prepared using above tree and it has high adsorption capacity. It reduces turbidity and odder of the drinking water. The other hand, above tree is used for pulp making process. Langmuir isotherm was used describe the material characterization with surface sites and adsorption capacity. Influence of p^H , time and amount of adsorbent for the adsorption ware examined by the laboratory conditions Lagergren equation was used to determine rate constant. Adsorption of iron colloid to the charcoal is a pseudo second order reaction. It makes mono layers with iron colloid.